UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,604	02/08/2002	William A. White III	SAA-74-1	5361

46901   7590   05/31/2005

WALLENSTEIN WAGNER & ROCKEY, LTD
311 SOUTH WACKER DRIVE
53RD FLOOR
CHICAGO, IL 60606-6630

EXAMINER
TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
Office Action Summary		10/071,604	WHITE ET AL.
		Examiner	Art Unit
		Joseph D. Torres	2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 May 2005</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-44</u> is/are pending in the application.

    4a) Of the above claim(s) <u>9-16 and 29-36</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8, 17-28 and 37-44</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>31 January 2005</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/23/2004</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail. Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Election/Restrictions

1.   Applicant's election with traverse of Group I (Claims 1-8, 17-28 and 37-44) in the reply filed on 05/02/2005 is acknowledged.

Applicant's election of Group I (claims 1-8, 17-28 and 37-44) in the reply filed on 05/02/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Claims 9-16 and 29-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

This application contains claims 9-16 and 29-36 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2.   The drawings are objected to because the blocks in the block diagram of Figures 1, 3 and 4 do not have descriptive labels **in English** (the Examiner would like to point

out that Examiners use drawings in their searches for Prior Art and the corrections

would provide additional patent protection by aiding Examiners in their searches for

Prior Art). Applicant is advised to employ the services of a

competent patent draftsperson outside the Office, as the U.S.

Patent and Trademark Office no longer prepares new drawings.

Corrected drawing sheets are required in reply to the Office action to avoid

abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if

only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as "amended." If a drawing figure is to be canceled, the

appropriate figure must be removed from the replacement sheet, and where necessary,

the remaining figures must be renumbered and appropriate changes made to the brief

description of the several views of the drawings for consistency. Additional replacement

sheets may be necessary to show the renumbering of the remaining figures. The

replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as

per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the drawings

will not be held in abeyance.

Response to Arguments

3.   Applicant's arguments with respect to claims 1-8, 17-28 and 37-44 have been

considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claims 1, 17, 18 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated

by Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte).

35 U.S.C. 102(b) rejection of claims 1, 17, 18 and 37.

Labonte teaches detecting an error (col. 7, lines 14-29 in Labonte teaches detecting

errors using CRC); calculating a raw bit error rate (col. 6, lines 30-39 in Labonte teaches

calculating a raw bit error rate); correlating a residual error probability in response to the

detected error rate (col. 6, lines 49-56 teaches a means for correlating the residual error

probability to previously calculated BER on only frames that pass the CRC check to

produce a residual error probability referred to as residual BER, RBER, in Labonte;

Note: errors detected by the CRC check are errors that went undetected by error

correction decoder 43 in Figure 4 of Labonte); and, executing a corrective action related

to transmitting messages, the execution being activated in response to the residual

error probability (the abstract in Labonte teaches that user voice messages are

switched to being transmitted on the FACCH channel in response to the RBER being

lower than a given threshold; Note: switching transmission to the FACCH channel is a

corrective action), wherein executing the corrective action comprises regularly executing

the corrective action on all of at least one type of the messages (the abstract in Labonte

teaches executing the corrective action of switching transmission to the FACCH channel

comprises regularly executing the corrective action on all of the user voice messages),

without executing the corrective action on another the of the messages (Note: the

corrective switching action in Labonte is never taken on FACCH control messages since

FACCH control messages are always transmitted on the FACCH control channel

without and corrective switching).

Note: Figure 6A-6c provide various segments of an algorithm for implementing the

corrective action switching mechanism taught in Labonte.

Note also that col. 6, lines 49-56 teaches a means for correlating the residual error

probability to previously calculated BER on only frames that pass the CRC check to

produce a residual error probability referred to as residual (errors detected by the CRC

check are errors that went undetected by error correction decoder 43 in Figure 4 of

Labonte); hence CRC decoder 44 in Figure 4 of Labonte is a means for determining an

error that went undetected by Decoder 43.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating
    obviousness or nonobviousness.

5.   Claims 2, 22 and 38 is rejected under 35 U.S.C. 103(a) as being unpatentable

over Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte) in view of

Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communication and

Storage", Prentice-Hall, 1995, pages 240-243 & 396-409).

35 U.S.C. 103(a) rejection of claims 2, 22 and 38.

Labonte substantially teaches the claimed invention described in claim 1 (as rejected

above).

However Labonte does not explicitly teach the specific use of retransmission.

Wicker, in an analogous art, teaches use of retransmission (Equation 15-2 on page 396 of Wicker teach that the residual error rate for accepting packets P(E) is bound by $P_{ub}(E)/(1 - P_{db}(E))$. Note: $P_e = P_{ub}(E)$ and $P_r = P_{db}(E)$; the last paragraph on page 402 of Wicker teaches retransmission takes place even if a request for transmission has not been received).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Labonte with the teachings of Wicker by including use of retransmission. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of retransmission would have provided additional error correction capabilities for the channel.

6.   Claims 3, 5-8, 19-21, 23, 25-28, 39 and 41-44 rejected under 35 U.S.C. 103(a) as being unpatentable over Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte) and Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communication and Storage", Prentice-Hall, 1995, pages 240-243 & 396-409) in view of Mangold; Peter et al. (US 5926232 A, hereafter referred to as Mangold).

35 U.S.C. 103(a) rejection of claim 3.

Labonte and Wicker substantially teaches the claimed invention described in claim 1 and 2 (as rejected above).

However Labonte and Wicker do not explicitly teach the specific use of corrective action comprises shortening the length of the message.

Mangold, in an analogous art, teaches corrective action comprises shortening the length of the message (the Abstract in Mangold teaches that a quality parameter is measured and in response to the quality parameter, the corrective action of adding redundancy in response to the quality parameter; Note: claim 7 in Mangold teaches that the quality parameter is residual error rate, i.e., residual error probability; Note also that changing the error correction code change the length in of the message in a fixed block transmission system since more redundant bits translates to less message bits). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Labonte and Wicker with the teachings of Mangold by including use of corrective action comprises shortening the length of the message. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of corrective action comprises shortening the length of the message would have provided a means for adaptively changing error correction capabilities (Abstract in Mangold).

35 U.S.C. 103(a) rejection of claims 5 and 6.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 1-4, 9-12 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of Maximum Likelihood filtering to determine residual error rates.

The Examiner asserts that Labonte, Wicker and Mangold teach a means for determining residual error rates, but do not teach specific hardware for determining residual error rates. One of ordinary skill in the art at the time the invention was made would have been highly motivated to create a specific hardware means for implementing the design in the Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Labonte, Wicker and Mangold by including use of Maximum Likelihood filtering to determine residual error rates. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of Maximum Likelihood filtering to determine residual error rates would have provided the opportunity for implementing the design in the Labonte, Wicker and Mangold patents.

35 U.S.C. 103(a) rejection of claim 7.

The decision to change error correction codes in Mangold is based on changes in residual error rates, hence is substantially based on rate of deterioration of the residual error rates.

35 U.S.C. 103(a) rejection of claim 8.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 1-3, 5-7, 9-11 and 13-16 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of a PID. The Examiner asserts that using a specific part of a packet to determine residual error rate does not deviate from the scope or the intent of the teachings in Labonte, Wicker and Mangold since Labonte, Wicker and Mangold encompass error correction for any and all parts of the packet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Labonte, Wicker and Mangold by including use of a PID. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a PID would have provided the opportunity to correct errors in any or all parts of the packet.

35 U.S.C. 103(a) rejection of claims 19-21.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in claims 17 and 18 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of specific hardware used to determine residual error rates.

The Examiner asserts that Labonte, Wicker and Mangold teach a means for determining residual error rates, but do not teach specific hardware for determining residual error rates. One of ordinary skill in the art at the time the invention was made

would have been highly motivated to create a specific hardware means for

implementing the design in the Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Labonte, Wicker and Mangold by

including use of specific hardware used to determine residual error rates. This

modification would have been obvious to one of ordinary skill in the art, at the time the

invention was made, because one of ordinary skill in the art would have recognized that

use of specific hardware used to determine residual error rates would have provided the

opportunity for implementing the design in the Labonte, Wicker and Mangold patents.

35 U.S.C. 103(a) rejection of claims 23 and 39.

Changing the error correction code change the length in of the message in a fixed block

transmission system since more redundant bits translates to less message bits.

35 U.S.C. 103(a) rejection of claims 25, 26, 41 and 42.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in

claims 17-23 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of

Maximum Likelihood filtering to determine residual error rates.

The Examiner asserts that Labonte, Wicker and Mangold teach a means for

determining residual error rates, but do not teach specific hardware for determining

residual error rates. One of ordinary skill in the art at the time the invention was made

would have been highly motivated to create a specific hardware means for

implementing the design in the Labonte, Wicker and Mangold patents.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Labonte, Wicker and Mangold by

including use of Maximum Likelihood filtering to determine residual error rates. This

modification would have been obvious to one of ordinary skill in the art, at the time the

invention was made, because one of ordinary skill in the art would have recognized that

use of Maximum Likelihood filtering to determine residual error rates would have

provided the opportunity for implementing the design in the Labonte, Wicker and

Mangold patents.

35 U.S.C. 103(a) rejection of claims 27 and 43.

The decision to change error correction codes in Mangold is based on changes in

residual error rates, hence is substantially based on rate of deterioration of the residual

error rates.

35 U.S.C. 103(a) rejection of claims 28 and 44.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in

claims 17-23 and 25-27 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of a PID.

The Examiner asserts that using a specific part of a packet to determine residual error

rate does not deviate from the scope or the intent of the teachings in Labonte, Wicker

and Mangold since Labonte, Wicker and Mangold encompass error correction for any

and all parts of the packet.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Labonte, Wicker and Mangold by

including use of a PID. This modification would have been obvious to one of ordinary

skill in the art, at the time the invention was made, because one of ordinary skill in the

art would have recognized that use of a PID would have provided the opportunity to

correct errors in any or all parts of the packet.

7.   Claims 4, 24 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Labonte; Sylvain et al. (US 5828672 A, hereafter referred to as Labonte), Wicker

(Stephen B. Wicker, "Error Control Systems for Digital Communication and Storage",

Prentice-Hall, 1995, pages 240-243 & 396-409) and Mangold; Peter et al. (US 5926232

A, hereafter referred to as Mangold)in view of Schroeder; Robert Edward et al. (US

5933111 A, hereafter referred to as Schroeder).

35 U.S.C. 103(a) rejection of claims 4, 24 and 40.

Labonte, Wicker and Mangold substantially teaches the claimed invention described in

claims 1-3 (as rejected above).

However Labonte, Wicker and Mangold do not explicitly teach the specific use of

ceasing transmission of the message.

Schroeder, in an analogous art, teaches ceasing transmission whenever an error

condition that a corrective action cannot overcome occurs (col. 1, lines 55-58 in

Schroeder).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Labonte, Wicker and Mangold with the teachings of

Schroeder by including use of ceasing transmission of the message. This modification

would have been obvious to one of ordinary skill in the art, at the time the invention was

made, because one of ordinary skill in the art would have recognized that use of

ceasing transmission of the message would have provided the opportunity to abort

transmission whenever an error condition that a corrective action cannot overcome

occurs (col. 1, lines 55-58 in Schroeder).

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any
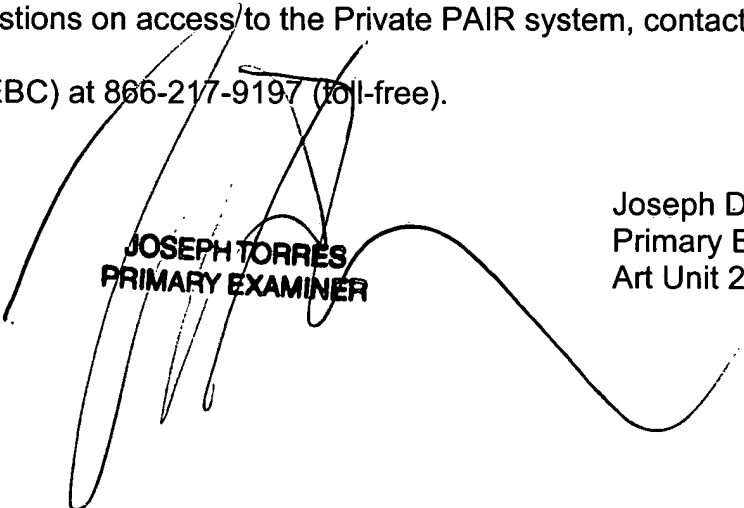
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph D. Torres whose telephone number is (571)

272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133